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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,918	07/31/2003	Phillip G. Wald	400.116US02	9617

7590 05/06/2004

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EXAMINER
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SMITH, BRADLEY

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/631,918

**Applicant(s)**

WALD ET AL.

**Examiner**

Bradley K Smith

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 12-15 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-11 is/are rejected.
- 7) ☐ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/31/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search notes.

## **DETAILED ACTION**

### ***Priority***

1. If applicant desires priority under 35 U.S.C. 120 based upon a previously filed application, specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. \_\_\_\_\_" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

### ***Claim Objections***

2. Claims 1-9 are objected to because of the following informalities: in line 7 of claim 1 there insufficient antecedent basis for "the first conductor plate". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4-11

4. Claims 1-2, ~~4-6 and 9-11~~ are rejected under 35 U.S.C. 102(b) as being anticipated by Parekh (US Patent 6,140,172). Parekh disclose fabricating the first conductor layer vertically above a substrate; fabricating a dielectric layer over the first conductor layer (136); fabricating a second conductor layer (144) over the dielectric layer (142); selectively removing a portion of the second conductor layer and the dielectric layer to expose the first conductor plate; and electrically coupling the exposed first conductor to receive a program voltage (see figure 20 see columns 7 and 8). With regards to claim 2 Parekh discloses the first conductive layer is hemispherical grained polysilicon (HSG). With regards to claim 4 Parekh disclose the formation of doped HSG polysilicon, and the examiner takes official notice that it one of ordinary skill in the art to doped the polysilicon with arsenic, since doping with arsenic is well known. With regards to claim 5 Parekh disclose the insulation layer comprises silicon oxide, and silicon nitride. The examiner takes official notice that one of ordinary skill would have known to use an oxide-nitride-oxide as the insulation layer. With regards to claim 6 Parekh disclose the second conductive layer is polysilicon. With regards to claims 7-11, Parekh disclose fabricating a bit-line plug (160) in contact with the first conductive layer. Specifically with regards to claim 8, Parekh disclose "persons of ordinary skill in the art will recognize that a bitline plug could comprises a number of different materials" the examiner understands this to encompass polysilicon.

***Allowable Subject Matter***

5. Claims 12-15 are allowed.

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6. Claim 3<sup>is</sup> ~~are~~ objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests fabricating a layer of in situ doped polysilicon; depositing undoped HSG over the layer of doped polysilicon; and applying heat to conductively dope the overlying HSG layer (claim 3), fabricating first and second capacitors; removing dielectric material from the first capacitor; coupling a storage node of the first capacitor to a voltage source node; forming a first access transistor to couple the storage node of the first capacitor to a digit line; and forming a second access transistor to couple the second capacitor to the digit line (claims 12-15).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K Smith whose telephone number is (571)272-1884. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BKS



**VANTHU NGUYEN**  
**PRIMARY EXAMINER**